Traffic Engineering

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COVER: Artist's drawing of the new Susquehanna River bridge which will carry traffic on the Eastern extension of the Pennsylvania Turnpike.

Traffic Engineering is that phase of engineering which deals with the planning and geometric design of streets, highways, and abutting lands, and with traffic operation thereon, as their use is related to the safe, convenient, and economic transportation of persons and goods.

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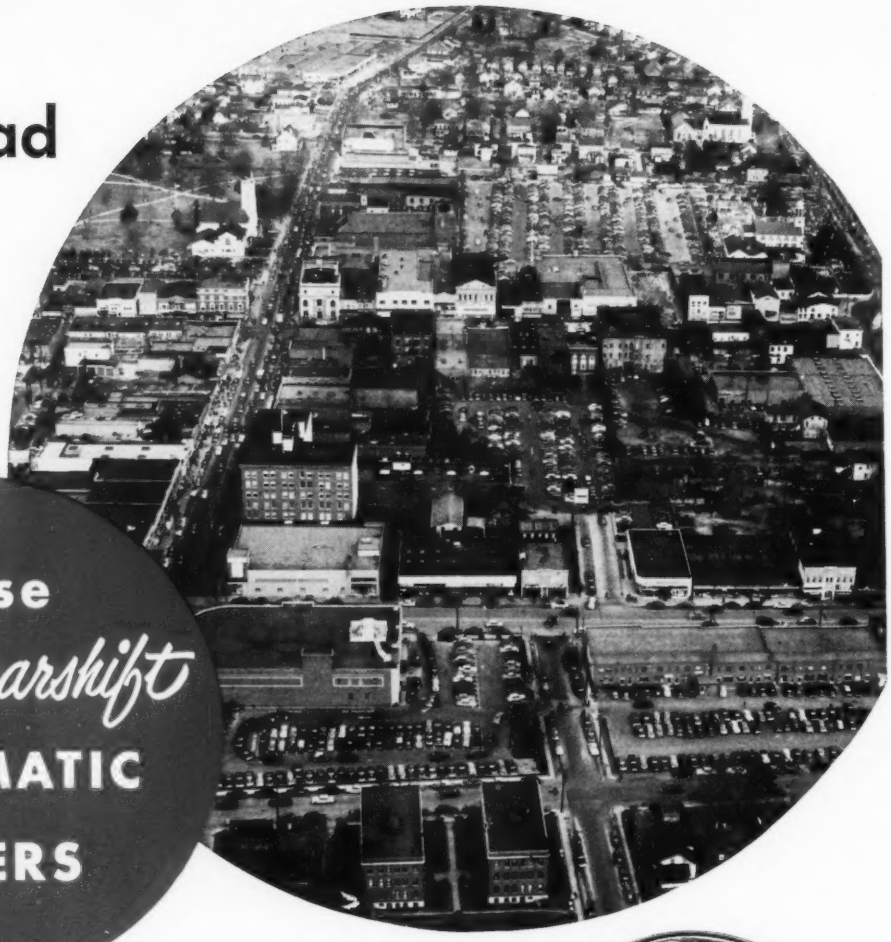
Hempstead weighed the facts...



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Frankly Speaking

THIS issue marks the first milestone of "Traffic Engineering" magazine—completion of one year in the present enlarged style. During the year many changes were made and earlier mistakes corrected. Many constructive suggestions for improvement and much praise was received. In some respects "Traffic Engineering" is proud of its accomplishments, in others there is ample room for further advancement and progress.

The October 1949 "Convention Issue" was the largest in the history of the magazine—68 pages. Also, it was the most expensive to reproduce, despite the support from a large group of advertisers. In this issue an attempt was made to incorporate some of the familiar type-faces and format to which readers had become accustomed. It seems we all must learn the hard way! The November and December issues were victims of the "leveling off" process. By the early months of 1950 the present "new look" had been adopted.

The first year has brought about a satisfying trend in *content*. The early issues presented articles literally wrenched from the hands of the authors by brute force and insistent pleas. Toward the middle of the year a few letters were received from individuals requesting consideration of their manuscripts for publication. These requests are steadily increasing, thus assuring your Editor a substantial back-log of feature material and the reader a selected series of sound, factual, technical articles dealing with traffic engineering and related problems of current interest.

On the business side of the magazine, your Managing Editor has worked long hours and completed many cross-country trips in the interest of improved relationships with manufacturers of traffic control and highway equipment. Advertisers are becoming better acquainted with the aims and objectives of "Traffic Engineering" and with its increasing circulation to those individuals directly responsible for the purchase of equipment. The list of regular advertisers continues to grow, along with consultants interested in the Professional Services Directory. For the first time "Traffic Engineering" magazine is listed in the Standard Rate and Data Service Catalogue as befits its growing stature and recognition in the publication world.

Perhaps we should feel satisfied that all of these things have come about in the brief span of one volume year and that "Traffic Engineering" retains the distinction of being the only publication of its nature on the market today. The fact remains that *we are not satisfied!* Much work is yet to be done. The time is approaching when "Traffic Engineering" and the Institute of Traffic Engineers will outgrow a part-time Editor and require a full-time Publications Manager. The present circulation of 2400 should be doubled. The present number of advertisers should be doubled. The size of each issue (i.e., number of pages) should be doubled.

These goals cannot be achieved overnight. Only through the continued efforts of the Editorial Staff, the continued cooperation of ITE members in providing technical articles and securing additional advertisers, and the efforts of all of our many non-member subscribers in supporting the above groups and assisting in obtaining additional subscribers, can we hope to complete this program of expansion. Your Editor will do his share. Will each of you do yours?

Robert S. Holmes

Editor

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The Public Saves A Traffic Plan

By Fenton G. Jordan Jr. (Assoc. Mem., ITE)
Traffic Engineer, City of Norfolk, Virginia

THIS is the story of how a successful traffic plan was saved by public opinion from defeat at the hands of selfish interests.

It was just about 18 months ago that the plan was put into effect. It was the morning of February 21, 1949 and the Traffic Engineering Division and a large part of the Police Department nervously awaited 7:00 A.M.—"H" hour for Norfolk's new downtown traffic plan.

There was nothing particularly startling in the concept of the traffic plan. It involved the use of tried and true principles—one-way streets, reversible one-way streets, an off-center lane movement on a forty foot business artery, a rush hour ban on parking and truck deliveries on the main stem, minor changes in bus routes and improved progressive timing of the traffic signals. But several of the innovations, particularly the reversible one-way street and the off-center lane movement were completely new to the driving public of Norfolk and many people were frankly skeptical as to the success of the entire venture.

The Plan

The plan as shown in Figure 1 was no "fly-by-night" idea. Its preparation had required almost two years of careful study. Volume counts, speed and delay tests and intensive studies of the general movement of traffic had been made and origin and destination surveys of bus passengers had been conducted by the Virginia Transit Company. The traffic plan had been prepared in the Traffic Engineer's office while the transit routing plan was a cooperative venture.

The reversible one-way street and the off-center lane movement, while not original, are worthy of special mention as far as method of execution and results obtained are concerned.

Reversible One-Way Street

From studies of traffic counts and driving habits of the public it was found that Llewellyn Avenue, a southbound one-way artery, which was twenty feet wide, could be put to maximum use only if the direction of the traffic flow was reversed at certain times of the day. It was therefore decided to keep the street one-way southbound from 8:00 to 9:00 A.M. in order to carry the morning downtown rush, but during the rest of the day it would be one-way northbound so that it could better handle the northbound P.M. rush and other traffic leaving the Central Business District.

To control the direction of movement, standard one-way left and right arrows were double mounted on a short length of one and a half inch pipe, which was inserted into the two inch sign standard in such a manner that they could easily be turned with a special tool. When in place, the signs fit into a slot which prevents turning in the wind or illegal tampering. A special "Observe Arrow Direction" sign (see Figure 2) was also mounted under the one-way arrow to call the motorists' attention to the direction of the movement of traffic. Likewise, reversible "Enter" and "Do Not Enter" signs were used at each end of the one-way section.

Off Center Lane Movement

Boush Street, the main north-south artery in the downtown area, is only forty feet wide and carries a twenty-four hour traffic volume of 13,500 vehicles. An off-center lane movement during certain hours of the day was the most practical method available for increasing the efficiency of movement on this street. But Norfolk has a peculiar traffic pattern due to the fact that the Naval Base is located at one end of the City and the Central Business District at the other. This results in a north and southbound peak in the downtown area both in the morning and the afternoon. Fortunately, for traffic, the Naval Base begins and ends its working day earlier than the Central Business District. The morning peaks therefore are not simultaneous, but the afternoon peaks are only separated by a very few minutes, since it requires about thirty minutes for the Naval Base traffic to reach the Central Business District.

From traffic counts it was found that, in order to accommodate the peak flows, the off-center lane movement should be used during the morning southbound rush from 8:00 to 9:00 A.M. and in the afternoon northbound rush from 5:00 to 6:00 P.M. But, the almost simultaneous occurrence of the north and southbound traffic peaks in the afternoon precluded its use at that time, for southbound traffic was so heavy that it could not be confined to a single lane. Accordingly, it was decided to use the off-center lane movement only during the morning southbound peak hour.

The length of the movement is about three quarters of a mile and is controlled with portable signs set in the street, as in Los Angeles, at a hundred and fifty foot intervals (see Figure 3).

Fortunately Llewellyn Avenue—Boush Street formed a continuous artery so that the reversible arrows on Llewellyn Avenue and portable signs on Boush Street could be handled very well by one crew.

How The Plan Was Sold

The plan looked good on paper but many a good paper idea has backfired when put into actual practice. Initially it was assured of success because no stone had been left unturned to obtain public support. The plan was prepared by the Traffic Engineering Division for the Parking and Traffic Commission and representatives from both daily newspapers had sat in on the executive sessions where the ideas were thoroughly thrashed out and retained or discarded after much discussion. The press cooperated completely by withholding the news until ready for release.

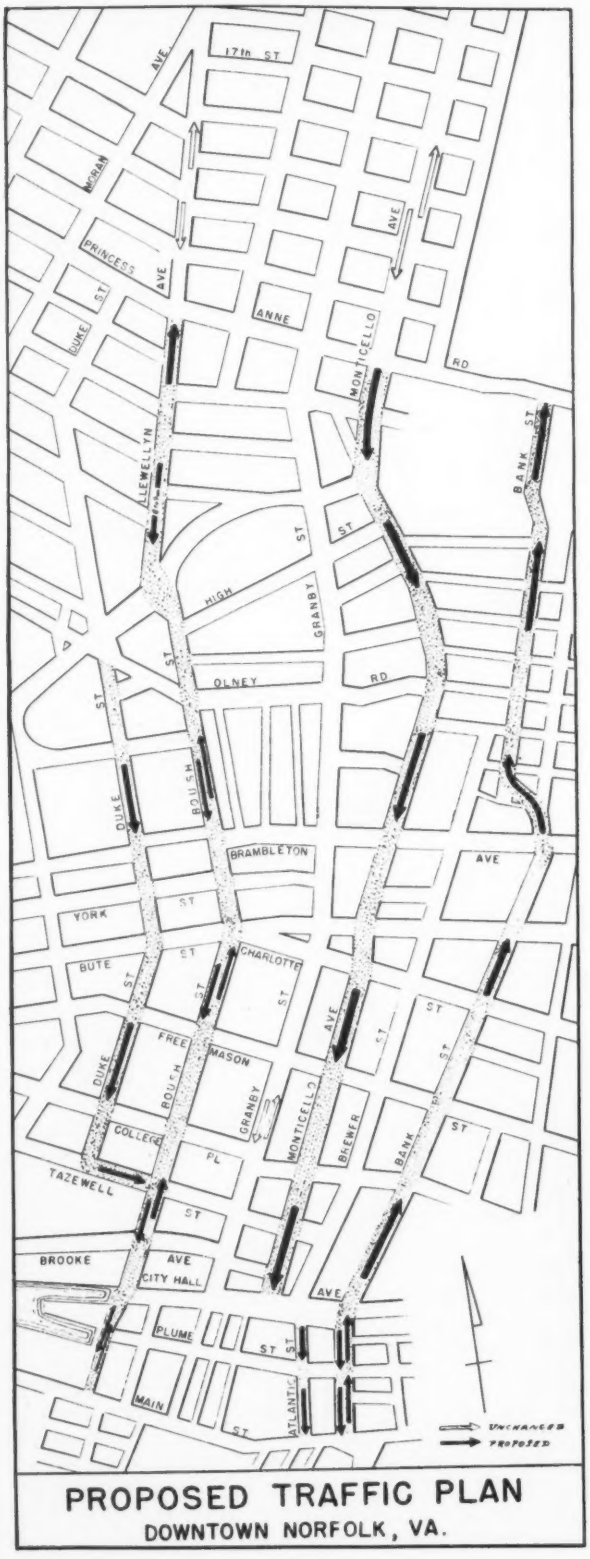


Fig. 1

Plans, when finished, were sent to the Editors of the newspapers who were likewise asked to study them but keep the information confidential until the release date of the publication. Before the plan was released it also had the approval of the Tidewater Automobile Association (AAA), the Chamber of Commerce, and the Retail Merchants Association.

After all parties had been thoroughly sold on the idea it was presented to the City Council for its official blessing. At that time details were released to the general public. Council passed it without any change and "D" day was set for February 20th, thirty days after the approval. Since the Editors of the papers were in on the scheme, very favorable editorials were carried in both newspapers the day after its release. From then on the public was kept informed of the traffic changes by newspapers, radio, hand bills, luncheons and civic group talks, etc. The main publicity efforts were concentrated through the newspapers and the radio and their cooperation was excellent. A story, or pictures of some feature of the plan, appeared in the papers every day during the "publicity month." Talks were made at regular intervals on each of the five radio stations and one station broadcast recorded messages four times a day for two weeks prior to its inauguration. All traffic signs were installed and covered with paper and cardboard the week before the plan went into effect. Pictures of the sign installations were also used to attract the public's attention.

"D" Day and Thereafter

At 7:00 A.M., Monday, February 21st, fifty policemen, assigned to the important intersections to aid the motorists, hitched up their belts and took their stations. At 8:00 A.M., the crew began turning and placing the signs. The plan had actually gone into effect on Sunday, the 20th, so that

Photograph by Allen T. Hayes (Jun. Member, ITE)

Fig. 2
Reversible One-Way Arrow

Photograph by Allen T. Hayes (Jun. Member, ITE)

Fig. 3
Off Center Lane Movement During Morning Rush On Boush Street

the essential personnel could become familiar with its details. But traffic was light downtown on Sunday, so Monday was the big day.

The results were better than had been anticipated. During the morning peak between 8:30 and 9:00 A.M., traffic moved very smoothly along Llewellyn Avenue, the reversible one-way street, and along the off-center portion of Boush Street. Checks made after the new system had been in operation for a reasonable length of time showed that Boush Street—Llewellyn Avenue (which is a continuous street) carried 537 vehicles in the peak half hour in two lanes at a speed of 15½ miles per hour with traffic lights set for 21 miles per hour. Likewise, Monticello Avenue, a new southbound street, carried 554 vehicles in two lanes during the same half hour period at a speed of 16.1 miles per hour with traffic lights set for 21 miles per hour.

Afternoon results also exceeded expectations. Bank Street, formerly a two-way street, but made one-way northbound under the new plan, lived up to its expectations as the principal northbound artery leading to the northeast part of the City. Traffic flowed extremely well on the opening day but the volume was light. This was due to the fact that a large number of motorists, unaware of how smoothly the traffic would move on this street, were still using other streets. However, the volume increased almost daily until now it carries 703 vehicles during the peak half hour between 5:00 and 5:30 P.M. and 1,262 vehicles during the peak hour in two lanes at an average speed of 16.9 miles per hour (see Figure 4). The table below, showing comparative peak hour volumes between two-way and one-way operation, demonstrates the increased efficiency achieved through one-way movement.

BANK STREET
COMPARATIVE PEAK VOLUMES

	TWO-WAY	ONE-WAY
Peak half hour (5:00 to 5:30 P.M.)	613 both dir.	703
Peak hour (5:00 to 6:00 P.M.)	1,016 both dir.	1,262

Everything moved smoothly for about four months. Public acceptance became more apparent as traffic volumes, especially on the one-way streets, climbed steadily but the usual mumblings of discontent were being heard from the merchants along the one-way streets. The mumblings finally took the form of a petition requesting the City to return one of the streets to two-way traffic. Since this street was the key to the whole plan any change would have been distrastrous.

How The Plan Was Saved

The petition had been expected and a plan of action had already been prepared. It was our opinion that the driving public was wholeheartedly in favor of the new traffic plan. But, in most cases the contented never take the trouble to register their approval. It is usually the discontented that are always well organized and easily claim the attention of the proper people. The campaign was started by contacting several distinterested citizens and explaining that if they approved of the present traffic routing would they so indicate by writing letters to the Editors of the papers. These letters were published and caught the public fancy so that a steady stream of correspondence (all favorable) floated to the Editors' desks. The newspapers, sensing the arousal of public opinion, carried editorials advising careful study by Council before making a decision.

The next step was to contact the Civic Councils, Improvement Leagues and similar organizations and ask them to put the merits of the traffic plan to a vote at their next meeting. If favorable, they were asked to register a protest to the City Council over the proposed change. The response was immediate and favorable in all cases and many resolutions protesting the change in the traffic movement were presented to Council.

(See PUBLIC SAVES, *page 465)*

Photograph by Allen T. Hayes (Jun. Member, ITE)

Fig. 4
Morning Rush On One-Way Monticello Avenue

Pennsylvania's 350-Mile Expressway System

By William S. Canning (Mem., ITE)
Engineering Director, Keystone Automobile Club, Philadelphia, Pennsylvania

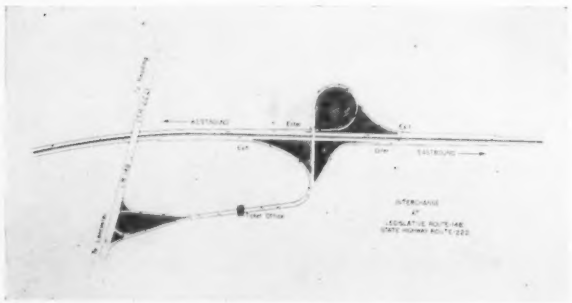
The great agricultural and industrial areas of the Mid-West will be linked directly to the Port of Philadelphia in the foreseeable future by a 350-mile Expressway, the longest in the world. According to present tentative scheduling the eastern extension of the Turnpike is due to be opened to service on October 1, 1950—the tenth anniversary of the opening of the original 160 miles, and the western extension is anticipated to be officially opened October 1, 1951. Many stories have been written about the various portions of this super-highway, the Pennsylvania Turnpike, its Eastern and Western extensions, the Valley Forge Expressway, and the Schuylkill Expressway. No attempt has been made, to our knowledge at least, to tie all these stories together until the following article was written.

UPON completion of the eastern and western extensions of the Turnpike, Pennsylvania will have the longest stretch of expressway in the world.

It will be a divided arterial highway for through traffic with full or partial control of access, and with grade separations at intersections extending from the Ohio line to the Port of Philadelphia, a distance of approximately 350 miles.

The original Pennsylvania Turnpike, from Irwin to Middlesex, near Carlisle, was a distance of 160 miles. The western extension to the Ohio line, near Petersburg, south of Youngstown and New Castle, will be 67 miles long. The eastern extension, from Middlesex to King of Prussia, will be approximately 100 miles in length. From King of Prussia to the Philadelphia City Line, the Valley Forge Expressway will be 12 miles long, and from City Line, the Schuylkill Expressway, down the west bank of the river to University Bridge, will be about 6½ miles in length.

The project is designed to link the Port of Philadelphia with the industrial areas of this State and of Ohio, Indiana, Illinois and Michigan. This it will do most admirably upon



Typical Interchange

Construction stage on the Philadelphia extension showing the laying of two 12-foot lanes of concrete at one time.

the completion of the network of expressways within the city.

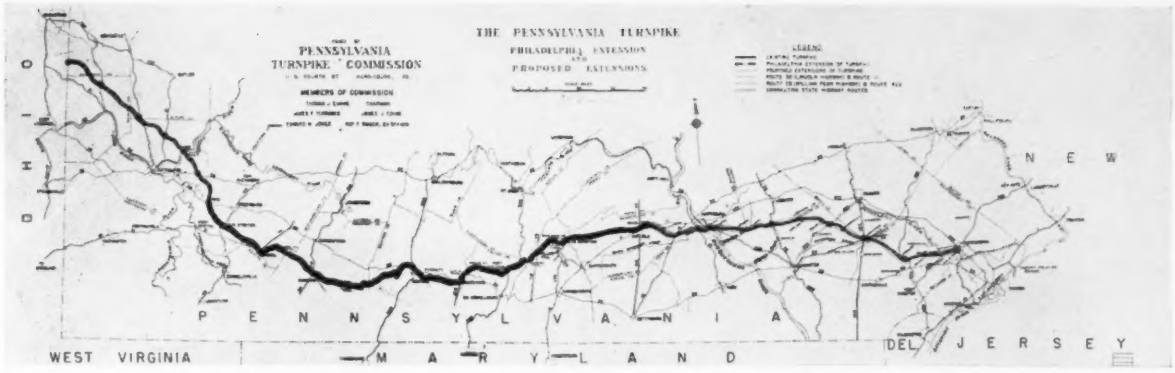
Much talk has been heard of the probable huge volumes of traffic that will be discharged by the Turnpike into the unprepared highways at King of Prussia and the city streets of Philadelphia.

Unquestionably, there will be a considerable volume of traffic arriving at King of Prussia and departing therefrom via the Turnpike, but the traffic over the Turnpike forms perhaps a third of that which arrives at City Line Avenue—the remainder being collected along the way from the various intersecting highways attracted to the Expressway by the improved means of access to downtown Philadelphia.

This traffic exists today, but travels over other highways and finds its way into the city by less attractive or convenient routes, as does some of that estimated to move over the Turnpike. There is a popular notion that the enormous volume carried by the Turnpike enters at one end and continues non-stop to the other. As a matter of fact, detailed records of the Turnpike Commission prove that only about 29% of the 17,976,000 vehicles that have used the Turnpike from the day of its opening, October 1, 1940, to July 1, 1949, traveled the full length. The other 71% entered the Turnpike or left it at some intermediate point, often for the pleasure of viewing the mountainous terrain through which the seven tunnels on the Turnpike pierce.

Historical Background

The Pennsylvania Turnpike had its inception more than a century ago, in 1837, when a railroad route was authorized by the Pennsylvania Legislature. In 1854 a line was started east of the Allegheny Range, but left unfinished. The South



The Pennsylvania Turnpike originally stretched for 160 miles between Irwin and Middlesex, near Carlisle. The Western extension will run to the Ohio State line, near Petersburg, another 67 miles, while the Eastern extension to King of Prussia will be about 100 miles long.

Penn Railroad, backed by the Vanderbilts, J. P. Morgan and Andrew Carnegie, started again about 1883 and actual construction proceeded for two or three years. The job, one-half finished, was abandoned in 1885, but in 1940 the Pennsylvania Turnpike Commission, authorized by the Legislature to build a Turnpike, proceeded to make use of the alignment and right-of-way, which it purchased for $2,000,000. Some part of the seven tunnels were used, but most of them, uncompleted, were either abandoned or widened, as was the grade approaching them.

The Turnpike is built on a 200-foot right-of-way, graded 78 feet wide, reduced to 28 feet through the tunnels. There are two 12-foot lanes in each direction, with a 10-foot median strip in the center and two 10-foot berms. Construction was started October 27, 1938, and the Turnpike was opened to traffic October 1, 1940.

The Philadelphia extension was started September 28, 1948, and is estimated to be completed variously from Labor Day to December 1, 1950.

Originally Cost 70 Million

The western extension to the Ohio border was started October 27, 1949. It also will be approaching completion by the end of 1950.

The original section cost around $70,050,000. It was financed by a grant of the PWA for $29,250,000 and $40,800,000 in Turnpike revenue bonds. Since its opening, the tolls collected have amounted to more than $28,380,000.

It is estimated that the western extension to the Ohio line may cost as high as $52,000,000. The extension eastward to King of Prussia may cost some $87,000,000, the Susquehanna River Bridge being an important item in this cost. It will have a length of 4,600 feet, a width of 66 feet, and will cost some $4,700,000.

The Philadelphia access highway from King of Prussia to City Line is estimated to cost some $22,354,000, which includes about $1,500,000 of property damage.

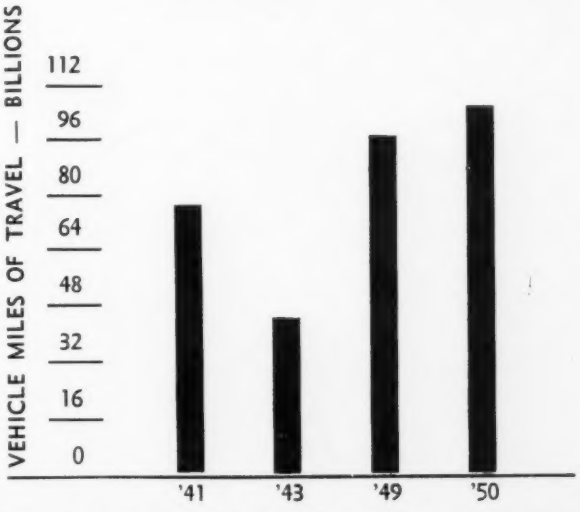
The Schuylkill Expressway within the city limits of Philadelphia, from City Line Avenue to University Bridge, will presumably cost some $76,000,000, including right-of-way and other contingencies. This will include the Roosevelt Boulevard and Vine Street extensions.

The Penrose Ferry Bridge and its approaches, a total length of 2.3 miles from somewhere near 80th Street to 26th Street, will cost about $12,000,000. This bridge structure will replace the old swing span on Penrose Ferry Road and will have two 4,550-foot spans and one of 700 feet. It will have an underclearance of 135 feet above high water, the same as the Delaware River Bridge.

No estimate is available at the moment on the section of the Roosevelt Boulevard between Oxford Circle and Broad Street, but it is contemplated that the five bridges will be widened; Oxford Circle underpassed; that there will be an improved intersection at Adams Avenue and the through lanes will be carried over Fifth Street, thus making the Boulevard a very desirable traffic artery but not of "expressway" or "limited access" design.

In the compilation of this report, Mr. Canning expresses appreciation and acknowledges the cooperation of Chief Engineer E. L. Schmidt of the Pennsylvania Department of Highways; Chairman Thomas J. Evans and Chief Engineer Ralph Stone of the Pennsylvania Turnpike Commission; Director Edmund Bacon and P. F. Crowley, Chief of Division of Land Planning, of the Philadelphia City Planning Commission; and Virgil Kauffman, president of the Aero Service Corporation, and a director of the Keystone Automobile Club.

Traffic Trends



TRAVEL ON RURAL ROADS FOR FIRST SIX MONTHS of 1941, 1943, 1949 and 1950.

Based on Bureau of Public Roads Data

The Place of the Engineer in Highway Safety

By C. W. Prisk (Mem., ITE)
Secretary, Committee on Engineering, President's Highway Safety Conference

ENGINEERING has long been identified as that phase of human endeavor that deals with the materialistic side of life. Streets, highways, and automobiles, good, bad, or indifferent, are engineering products; products that serve as the backdrop for the whole pageant of highway congestion, and tens of thousands of traffic deaths each year. It is entirely fitting then that engineers, as builders of an immensely useful transportation system, feel a deep concern that this same system has become the stage setting for so much highway tragedy.

The Committee on Engineering of the President's Highway Safety Conference is composed of safety-minded individuals who have reached a high place in their profession. On the roster are engineer representatives of the automotive industry, practicing highway and traffic engineers, both State and local, engineer representatives of the numerous national associations concerned with traffic safety, and operating officials for transit lines and commercial vehicle fleets. All these varied interests are agreed on the comprehensive program of engineering measures set forth in detail in the conference report. I could not hope in this short commentary to summarize adequately all essentials of that program. However, a few points have particular significance to those who are in constant touch with the realities of public opinion.

Engineering measures that are recommended in the interest of greater safety are, for all practical purposes and in most cases, indistinguishable from measures that make for efficient traffic handling. In other words, safety goes hand-in-hand with well-planned, well-executed highway and vehicle engineering.

Need For Street and Highway Improvement

Streets and highways are endowed with a permanence that is not matched by that of the automobile. Once constructed, highway facilities provide practically uninterrupted service over a long period of years—whereas the automobile is driven only a brief time, then discarded for a newer, improved model. This difference between the service life of roads and streets and that of the ever-improving rolling stock they accommodate is the highway engineer's constant reminder to make no little plans for the future. Highways adequate only for Model "T" travel breed today's accidents, for they lack the capacity to accommodate modern traffic.

Exciting advances in the automotive field during the past generation and the growth of our highway system have shot the popularity of vehicle travel to new highs with each succeeding year. But despite the public's extreme sensitivity to yearly changes in automotive styling and performance, there is a general apathy on the subject of street and highway improvement. As a recent survey by the Brookings Institution disclosed, the American motorist is spending only 10 cents of his transportation dollar for street and highway development, maintenance and operation. To arouse the public to an awareness of highway needs is perhaps the major task, for if we are to achieve greater traffic safety through engineering, more public funds are required. This, certainly, is one area of endeavor where the values of the press can be a great asset.

Legislators and councilmen are not apt to sponsor measures that they fear may be unpopular with their constituents, such as those for higher motor-vehicle tax revenue, unless the public speaks in numbers and with sufficient force to offset that fear. Quite obviously, the apathy shown by the public and their elected representatives on street and highway matters severely restricts the engineer's ability to build and operate safer streets and highways.

Traffic Engineers Are Technical Specialists

A serious difficulty—more serious than many engineers are ready to admit—in promoting better public appreciation of the safety contribution that modern engineering can make, is the highly specialized and technical aspect of many engineering solutions. People cannot understand why certain things are done and certain other things are not done. They become confused with the engineer's language. Terms like channelization, progressive signal systems, design speed, and control of access, and the conglomerations of figures frequently used in conjunction with these terms as a matter of routine technical practice, are quite consistently misunderstood by the layman. Yet to him, problems that are puzzling the best technical minds seem relatively simple of solution. Every day contact with traffic and informal observation tend to produce definite views regarding traffic solutions.

This is a most natural tendency but one that may and often does react to the detriment of traffic safety and the general welfare. Substituting lay opinion and judgment for critical engineering analysis and experience on traffic problems is akin to the use of quack remedies in lieu of modern medical treatment for ailments of the human body. The common cold provides a good analogy. Almost everyone but the doctor knows how to cure it.

If the influence of highway and traffic engineers is to be effective in combatting accident hazards, they must be permitted to operate as the technical specialists that they are. Engineer environment on traffic safety activities should also provide opportunity to work with police, educators, and other official and non-official groups.

Political and administrative tampering and interference

with the purely technical matters for which the engineer is logically responsible cannot be defended.

Increased Demands For Improved Traffic Management

Progressive states and cities are recognizing the need for better traffic management and are taking steps to assure a proper voice for the engineer in the handling of traffic and safety problems. A comprehensive survey of the situation in Los Angeles, California, conducted a little more than a year ago by a committee headed by Mr. D. Grant Mickle, Director of Traffic Engineering for the Automotive Safety Foundation, disclosed an undesirably wide dispersion of authority for performance of engineering functions in the traffic field. Nine city agencies were found to have varying measures of control or activity in traffic operations. It is heartening to report that positive steps have been taken toward correction of earlier administrative and organizational faults. Indeed, the traffic management pattern devised by the Traffic Survey Committee for Los Angeles is worthy of study by all cities for application in principle to their traffic-management problems.

The engineer's approach to traffic safety is always on a double course. He must design and build new streets and highways suited for safe travel by run-of-the-mine drivers, having learned by experience that driver habits cannot be readily remade to fit the highway. Expressways and freeways are illustrative of this first course and produce accident-fatality rates less than half that of other less modern facilities.

But other steps short of construction of these and other high-type improvements are needed. This, then, is the engineer's other responsibility, to make the best use possible of the tremendous mileage of existing streets and highways. Physical maintenance is involved, but beyond this is a whole range of operation measures for making safer and more efficient travel. One-way streets, intersection and parking controls, routing, channelization, and scientific use of traffic-control devices are typical operation measures where engineering skills and knowledge of the fundamentals of traffic flow are indispensable.

Engineers are aware now more than at any time in the past that the scientific approach of that profession has proved its worth as a factor in accident reduction. As this realization spreads among larger and larger segments of people in other professions, in other walks of life, public support for engineering as a means of attaining greater traffic safety will surely grow. The results will then be speaking for themselves, in this world, not in the next.

A Plan For A-Bomb Defense

Leslie Williams (Mem., ITE) has offered a tentative A-Bomb Defense plan to Police Commissioner Arthur W. Wallander, recently appointed Director of Civilian Defense for New York City. One of the Commissioner's chief problems will be traffic control in a bombed area.

Mr. Williams, War Transportation Administrator for Rhode Island during World War II, made a special study of war-time transportation problems in the Metropolitan New York area. In developing his plan, Williams stated that unless a sound traffic control plan were ready for instant application more persons would die through lack of it than would be killed by the bomb itself.

PUBLIC SAVES

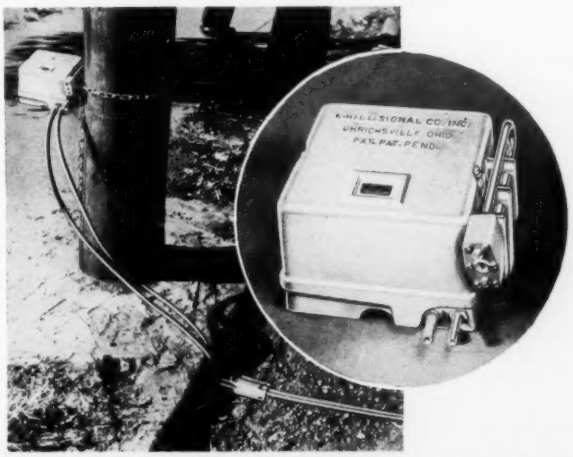
(Continued from page 461)

The work of the Traffic Engineering Division was completed. It was now up to the City Council to decide the issue. But no decision was ever necessary. The protests had been violent, well-timed and effective. Several days before it was to be decided letters were received from the protesting parties stating that, in their desire to work with the City Government in improving traffic conditions, they wished to withdraw their petition. So no change was made in the routing of traffic and to date no other protests have been received.

The success of this traffic plan can be attributed directly to adherence to three factors which are most essential to the success of any traffic plan. These factors are:

1. Certainty that the plan is basically sound in its concept and execution.
2. Assurance of initial success by obtaining support of newspapers and other key organizations, which can frequently be secured by merely discussing the various phases of the plan in an early stage of development.
3. The arousal of public opinion, if necessary, to the defense of the plan.

The significance of public acceptance or rejection of a traffic plan is something which cannot be overlooked. Traffic plans which are basically sound are continually being prepared or put into operation. But all too frequently they are discarded because, through public indifference, the necessary support is not furnished.



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Parking Planning and Action In Port Huron, Michigan

By I. S. Shattuck (Mem., ITE)
Planning Consultant, Wayzata, Minnesota

The author has been acting as Planning Consultant to the Port Huron City Plan Commission since 1945. He prepared "The Master Plan of Port Huron" published in 1947. Much of the material for this article was gathered by W. L. Collins, Assistant City Engineer, according to the author's outline and under the guidance of W. K. Willman, City Manager, and Allan T. Carlisle, City Engineer.

PARKING has never actually become as serious a problem in Port Huron as it has in most other cities, because City officials and organized business interests were parking conscious and used foresight in time to head it off. This original teamplay has carried through the stages of planning and programming action for the future.

Port Huron, a community of 40,000 population, more or less, stretches for seven miles along Lake Huron and the St. Clair River, where the latter starts its flow southward on its way to Detroit and Lake Erie. The central business district is bisected by the Black River which joins the St. Clair River at this point. This district caters to the City's population and that in the City's trade area covering all or parts of five counties in the so-called "Thumb" District of Michigan. Tourist trade swells local business in the summer months.

Highway U. S. 25, the north-south Interstate highway feeding the Blue Water bridge into Canada at Port Huron, serving points to the north along the shore of Lake Huron, and serving Detroit and other points to the south, is routed along the City's main business street.[1] The subdivisions of the business district formed by the crossing of this route over the Black River are the four quadrants in the illustration, labelled according to the points of the compass.

Present Municipal Parking Facilities

The parking-conscious businessmen and City officials agreed, shortly before World War II, that municipal action in providing additional parking facilities should be taken before conditions became intolerable. Municipal parking lot development started in 1941 and has expanded steadily, though not spectacularly, since then. The illustration shows the present lots, all operated free.

Lots A, B, C and D have capacities of 337 cars, 146 cars, 114 cars and 35 cars, respectively—632 cars in all. This, added to curb parking capacity and that of privately-operated facilities, gives a total capacity of some 3000 cars in the central business district.

The cost of acquisition and improvement of lot A (except for three tax-sale parcels) was financed by a special assessment bond issue of $28,500 shortly after the time of Pearl Harbor. The City's share was slightly more than $7000 and the remainder was assessed against property in an assessment district. This lot has a capacity now slightly in excess of the present parking demand in the southeast quadrant, where certain privately-owned parking facilities help satisfy the demand. Incidentally, some of the parking needs of the southwest quadrant are satisfied too. Lot A, being an entire block, was given a high-type improvement as a parking lot—concrete aisles, drainage, lighting, and substantial stop rails—at a cost of around $10,000.

Parcels forming the two portions of present lot B were acquired at four different times from 1942 through 1949. Due to these periodic accretions and the planned future expansion of the lot to include the entire block, improvement has been temporary, consisting only of grading and cinder treatment. The total acquisition cost was $34,000 and improvement cost was not much more than $1000, none of which was assessed against private property. Acquisitions since 1948 have been made with funds from the "parking site" fund, into which net annual meter revenues are put.

Lot C is operated by the municipality on a lease basis. The lease was negotiated in 1942. The annual cost of the lease, $450, is now paid out of the Parking Site fund. There is a certain amount of tax loss, too, as the property was removed from the tax roll in 1942.

Lot D was recently acquired at a cost of $8,000, paid out of the Parking Site fund. Curb parking capacity and that of lot A have previously been relied on for serving the current parking demand in this southwest quadrant, where it has been most difficult to find low cost property of convenient location for parking purposes.

Early acquisition of lots A and B at amazingly low cost was the result of foresight by the City Manager,[2] members of the City Commission and the Plan Commission, and organized business interests. The whole municipal approach to the parking problem was characterized by team play and action which has successfully combatted the problem to date to the extent that it has never reached the critical stage that it has in the business sections of most other cities. Only in rare instances can a shopper in an automobile not find a parking space within a short block from his destination.

Plans For Additional Municipal Parking Capacity

Port Huron's Master Plan, prepared by the writer for the City Plan Commission and published in 1947, was inclusive of a Parking Plan for the central business district.

[1]Construction of the first unit of a belt-line highway for the purpose, among others, of providing a by-pass route for through traffic, is now under way.

[2]City Manager at that time was Leonard G. Howell, now acting in a similar capacity for Madison, Wisconsin.

This plan, with some revisions, is being used as a guide to present and future action to provide additional parking facilities. The distribution of proposed ultimate municipal parking lots is shown in the illustration.

The reasoning applied to the future development of this system is that when parking demand approaches that which will tax ground-level parking capacity in any quadrant to its limit, decking for additional capacity, as needed, should be arranged for.

All the following are part of the organized action by City officials and businessmen to provide additional parking facilities in conformity with the plan.

Since 1948 upon resolution of the City Council, $20,000 of the City's annual gross revenue of some $26,000 from parking meters has been applied each year to a "Parking Site Fund." By the end of the present fiscal year (June 30) $60,000 will be available to assist in acquiring additional off-street parking facilities. A recent decision of the Michigan supreme court upheld the principle involved here.

A four-man parking committee of the Retail Merchant's Division of the Chamber of Commerce is currently meeting periodically with the City Manager, City Engineer and Planning Commission staff, in determining ways and means of providing additional parking facilities.

Installation of meters in municipal lots, use of the Parking Meter Site fund and assessment of some of the cost against property in an assessment district are being given consideration as means of financing the acquisition and development of additional facilities.

During 1949, this committee caused a petition, indicative of a desire to have the City act to provide additional parking facilities, to be signed by representatives of a great majority of downtown business proprietors, and presented to the City Commission.

Immediate development plans are looking toward acquisition of property which will provide for an additional 600-800 car capacity. The proposals in the Parking Plan, shown in the illustration call for a total, ultimate, ground-level parking capacity of approximately 1800 cars. This will doubtless be adequate for the parking demand in the immediate future. The possible additional demand in any quadrant of the central business district, however, should be ascertained through continuing future study of the problem, and parking decks for satisfying it should be provided.

Tables 1 and 2 show present capacity and proposed capacity, respectively, of off-street parking facilities, including some privately-owned.

Important Considerations In Connection With Business Expansion

The illustration on the next page gives the impression that Port Huron's business district is compact. In the 1947 Master Plan it is proposed that this compact shape be retained, even with considerable future business expansion. This can be done if:

Parking facilities are ample, but not so extensive that business expansion will be cramped.

It is reasoned that there is a certain maximum ground-level space that should be in parking use in the future and that additional capacity, if and when needed, should be provided by adding parking decks.

Local bus service is relied on to transport a considerable number of the employees in this district and a certain number of the shoppers.

TABLE 1

PRESENT CAPACITY
OFF-STREET PARKING FACILITIES

QUADRANT	MUNICIPAL FACIL.	PRIVATELY-OWNED FACILITIES			TOTAL
		OPEN TO PUBLIC	CUSTOMERS ONLY	EMPLOYEES ONLY	
NE	146	88	16	4	254
SE	337	195	33	61	586
SW	35	10	63	107	248
NW	114	164	53	96	427
TOTAL	632	417	165	268	1515

TABLE 2

PROPOSED CAPACITY
OFF-STREET PARKING FACILITIES
(Not including 2 planned facilities just outside the business district proper.)

QUADRANT	MUNICIPAL FACIL.	PRIVATELY-OWNED FACILITIES			TOTAL
		OPEN TO PUBLIC	CUSTOMERS ONLY	EMPLOYEES ONLY	
NE	579	67	0	4	651
SE	437	165	33	61	759
SW	373	10	63	97	518
NW	439	189	39	96	700
TOTAL	1828	431	135	258	2628

It cannot be expected that in Port Huron or any other city, parking and traffic facilities should be provided on the basis of 100% use of private automobiles for transportation downtown. The cost on this basis would be so high that business expansion would be driven away.

The route of Highway U. S. 25 is shifted from the main business street to the edge of the district.

A relocated highway along the easterly edge of the district and a new bridge over the Black River are features of this plan. These facilities will incidently improve traffic circulation in and around the business district.

These are important considerations affecting the future economic stability of Port Huron's central business district. In a town of this size the economic loss resulting from major business decentralization would be in the nature of a disaster.

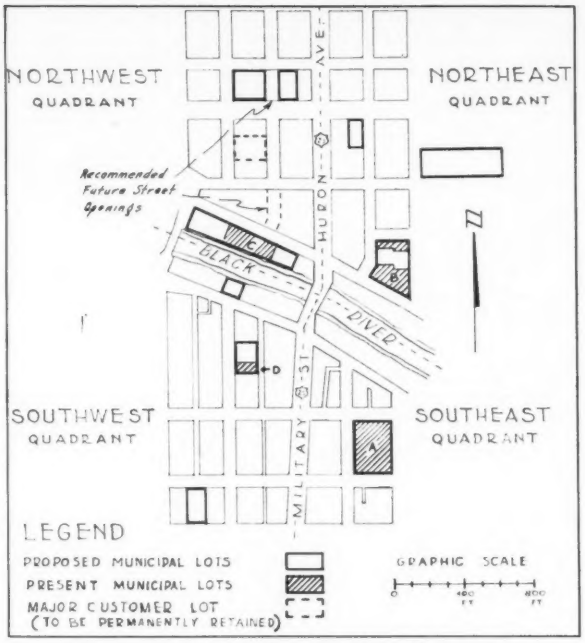
Parking Requirements in Zoning Ordinance

Port Huron's zoning ordinance, adopted in 1943, contains requirements for the provision of off-street parking and loading spaces for new business and industrial buildings and certain other structures. More comprehensive and scientific requirements, however, are needed. These were set up in a draft of a completely new zoning ordinance which is now under consideration for adoption.

There is no doubt that these requirements are a necessary part of any modern zoning ordinance, but nowhere have they been perfected to the point where they would apply to the parking demand that actually might be generated by new buildings. Administration of such requirements, consequently, is always carried on with considerable difficulty.

The following needs were considered in preparing the draft of the proposed new Port Huron Zoning Ordinance and in subsequent study of the ordinance by the Plan Commission:

1. Provision for adjusting the ordinance's off-street parking requirements under certain conditions, where exacting the strict requirements might be deemed to be unnecessary or a hardship in individual cases.
2. A provision for waiving them in the event of official approval and establishment of a comprehensive parking plan for the central business district or any other district.



Port Huron business district off-street parking facilities.

Power to adjust the requirements in individual cases was given to the Board of Appeals. The "waiving" provision, that was originally suggested was opposed by the City Attorney on the grounds of lack of uniformity of zoning regulations applying to zoning districts. The latter is considered to be a practical *necessity*, so the means of accomplishing it must, somehow, be found.

This problem deserves the attention of all those interested in the subject of "zoning requirements for parking." The writer is desirous of receiving comments and suggestions from any who feel they may have found the proper solution.

Highway Planning and Administration Get Attention

Long-range highway planning studies, limited access highways and reorganization of state highway departments have received considerable attention by the 1950 legislators, according to the National Highway Users Conference.

A *Georgia* law establishes a three-member State Highway Board, in lieu of the former twelve-member State Highway Commission, to manage the State Highway Department and provide long-range planning of improvements. A recent *Louisiana* introduction would create an eight-member "Legislative Highway Planning Committee" to be aided by an eleven-member Advisory Council consisting of representatives of major state-wide public and private agencies and organizations having a primary interest in streets and highways, to study and report on a long-range highway plan.

A new law in *Idaho* established a Department of Highways headed by the Commissioner of Highways in lieu of the former Bureau of Highways in the Public Works Department and transfers all powers and duties with respect to development of highways to the Commissioner.

A *New Hampshire* law abolishes the present highway department and establishes a Department of Public Works and Highways with all powers and duties of the former highway department.

A *Kentucky* law establishes a Department of Traffic Engineering in first class cities, with exclusive control over traffic using the streets of the city (including street lighting facilities) except the enforcement of traffic laws.

A new law in *Michigan* permits the State Highway Department to enter into contracts with counties, cities and villages and issue revenue bonds (not to exceed $200 million outstanding at any one time) to finance the connstruction cost of limited access highways. The bonds are secured by a pledge of state vehicle registration fees, gasoline taxes, receipts, Federal-aid and other revenues.

A bill pending in *Massachusetts* provides for incorporation of abutting service facilities in the limited access highway law, with management of such facilities under control of the Department of Public Works and the income to go into the Highway Fund.

An Electronic Volume Counter

By D. L. Gerlough (Jun. Mem., ITE)

Assistant Engineer, Institute of Transport and Traffic Engineering,
University of California

A FOUR-LANE electronic volume counter has been developed recently by the Los Angeles office of the Institute of Transportation and Traffic Engineering for use in its research studies. This counter is quite advantageous in that the equipment need not be located at the side of the road, but may be located some distance away, using wires to connect it with the roadway detectors. During a recent series of tests in Los Angeles, telephone lines more than eight miles long were used for transmission.

The unit is composed of four separate electronic circuits which operate four electromagnetic counters; each circuit contains provision for dividing the number of axles by two. Provision has been made so that the four-lane counter can be operated in conjunction with the Vehicle Speed Distribution Recorder previously described.[1] With this arrangement, the counter registers the volume in each lane continuously, while speed is being measured in one lane by means of the Speed Distribution Recorder. Such information is useful to traffic engineers and to enforcement authorities in studying lane utilization, enforcement needs,

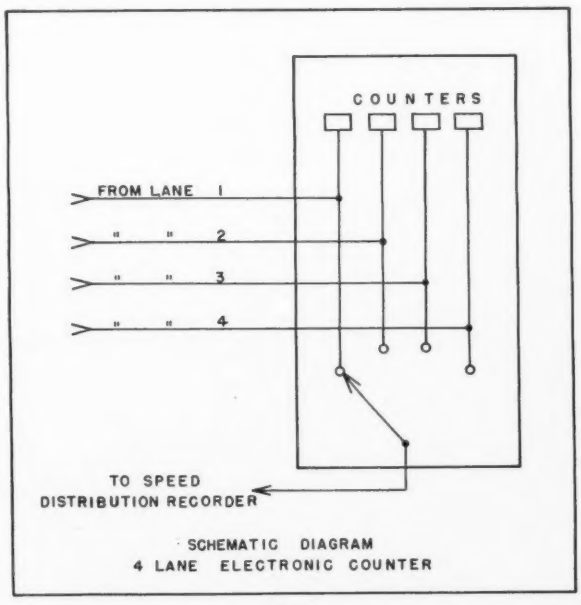


Fig. 1
Interconnection of Four-Lane Counter and Speed Distribution Recorder. The input from each lane is connected directly to the electronic counter for that lane. By means of a tap switch, the speed distribution recorder can be connected to any lane.

[1] "Applications of Electronic Techniques to Traffic Instrumentation," by Robert Bromberg and D. L. Gerlough. Proceedings of the Highway Research Board, Vol 28, pp. 348-353.

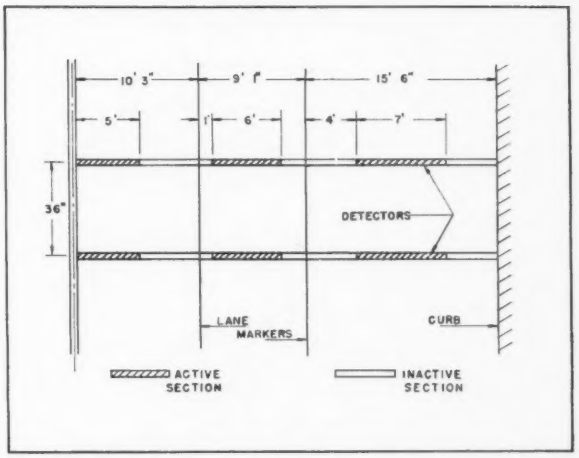


Fig. 2
Arrangement of Detectors on south side of Wilshire Boulevard. By a combination of active and inactive sections it is possible to minimize the misses and for double counts of cars straddling the lane markers.

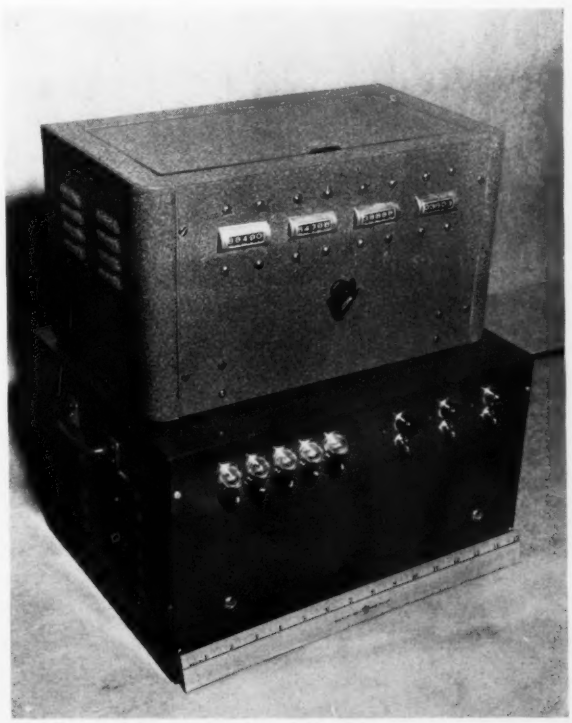


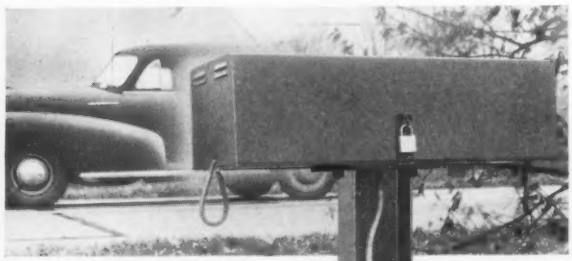
Fig. 3
The Four-Lane Counter and Its Separate Power Supply

congestion, etc. Figure 1 shows how a tap switch is provided in order to select the lane in which speed is to be measured.

The detector used to actuate this counter is the Institute's detector recently described before the Highway Research Board.[2] By connecting together appropriate segments of this detector it is possible to provide pickups for individual lanes and at the same time to minimize double recording of vehicles straddling the lane markers. When speeds are to be measured, two detector strips must be provided, while with volume alone only one detector is required. Figure 2 shows the arrangement of pickups recently used on one-half of Wilshire Boulevard in Los Angeles, at a point where Wilshire is essentially a freeway.

Figure 3 is a photograph of the counter and its separate power supply. The present power supply is operated from the 110-volt alternating current supply. The Institute expects within the near future to construct a modified version of this counter which will have facilities for periodically recording the count on a paper tape and which may be operated either from a 6-volt d-c source or from a 110-volt a-c source.

[2]"A Segmented Electrical Element for Determining Vehicular Traffic" by J. H. Mathewson, R. Brenner, R. J. Reiss. Presented at the 29th Annual Meeting of the Highway Research Board, Washington, D. C., December 16, 1949.



Here is the improved Permanent Station Traficounter — the latest in the line of Traficounters Streeter-Amet has developed over a period of many years. All highway departments who have relied on Streeter-Amet for help in their traffic problems will appreciate the many advantages of this new Traficounter. The detection is not affected by any weather — snow or ice. It is designed especially to eliminate rubber tubes or treadles. It detects vehicles at high or low density of traffic.

Write for information regarding this permanent Station Traficounter

Streeter-Amet Company
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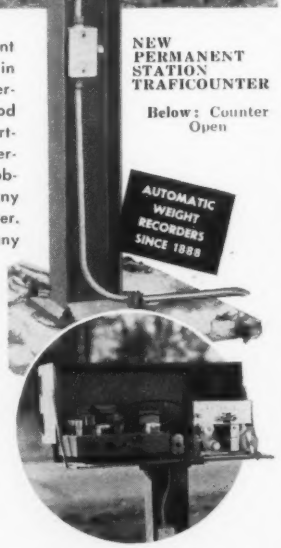
CHICAGO 13, ILLINOIS



NEW PERMANENT STATION TRAFICOUNTER

Below: Counter Open

Reference Notes

By Fenton G. Jordan Jr.
Traffic Engineer, City of Norfolk, Virginia

Off-Center Lane Marking

THE most obvious thing in the photograph is that the double center line is neither in the center of the street nor is it parallel to the curb. This was done to accommodate the varying volumes of traffic on the street. At the far end of the photograph you will notice that the street is divided into three lanes for eastbound traffic. This is necessary due to the fact that there are heavy right turn, through, and left turn movements. Whereas, the westbound traffic, in that particular block, is extremely light.

You will also note in front of the Monticello Hotel, although the loading platform is about twelve feet from the curb, through traffic is passing the buses on the left side rather than between the curb and the loading island. The space between the curb and loading island is designated as Hotel Traffic, whereas, the through traffic passes left of the island. The sign at the far end of the island directs motorists into the proper lane.

This photograph was interesting in that it shows how lane lines even in odd locations on the street can channelize the movement of the traffic and increase the theoretical capacity of a street.

NOTE: See article entitled "The Public Saves A Traffic Plan" elsewhere in this issue.

San Francisco's New Street Signs

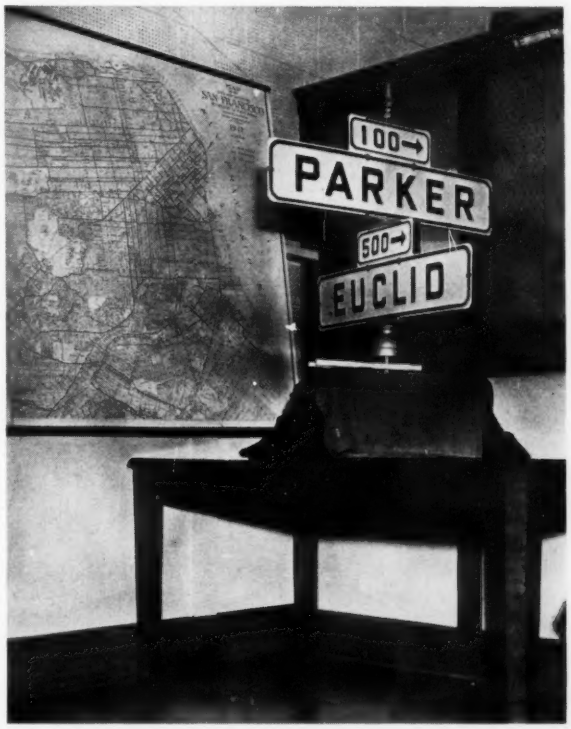
By George W. Purser (Assoc. Mem., ITE)
Traffic Engineer, City and County of San Francisco

To write on traffic in metropolitan areas today and not bring in the "horse and buggy days" would be somewhat remiss, but apparently our street signs were considered of that vintage.

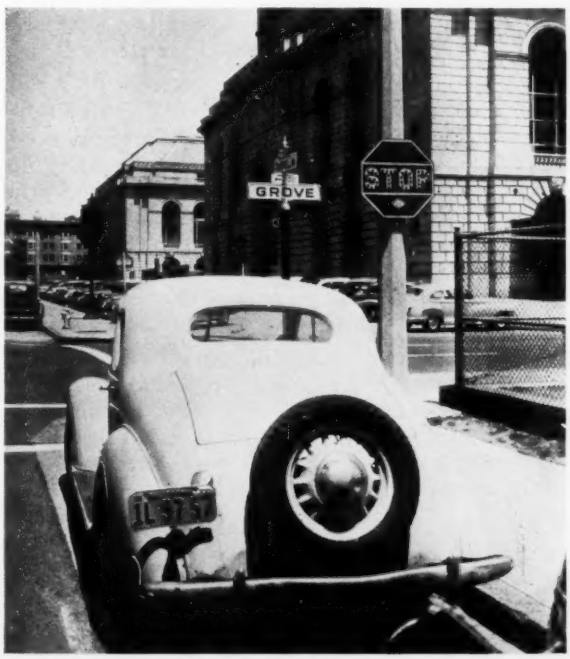
There was a time in San Francisco that to not know where Market Street was, one argued himself unknown. But times changed, the war preparations added twenty-five per cent to our population within a few months; new streets and subdivisions were opened; old residents knew not the new street, nor new residents the the old street. The city supervisors felt that the old signs, though substantial, were inadequate because they were too difficult to read by a passing motorist and should be replaced; consequently, an initial appropriation of $50,000 was made.

The old signs were 4 x 16 inches porcelain enamel plates. The letters were 3 inches high, white on a blue background. The plates were held in a bronze frame mounted on a 3 foot pipe pole.

Several tests were made of signs with various size letters. The use of 6-inch letters had been suggested. Models were made and viewed by the city fathers and the impractical designs discarded. Consequently, the "Traffic Engineering Section" of the Engineering Bureau sat down and designed a new assembly from first principles, incorporating in the design as much of the old assembly as possible.



This is the "model sign" exhibit that sold San Francisco officials on a new street marking program.



The above photograph shows a typical installation of the new street signs, easily read from a distance of 300 feet.

It was a bit hard to convince some people that 6-inch letters would render the size of the sign out of reason. It was finally decided to adopt 4-inch letters, embossed so as to give better contrast and to be seen at an angle. Reflections of light at an angle caused the name to be illegible when the letters were on the flat surface.

Details of New Signs

The new sign plate is 33 x 7 inches, 20 gauge steel, porcelain enameled on both sides, two plates held back to back. Above the street name, a plate 12 x 4½ inches also porcelain enamel, and an arrow points in the direction that block numbers increase. The name and number plates are separate, of course, so a stock of numbers useable on any street can be laid in.

The weather bureau informed us that the sea breezes are laden with minute particles of sea water; not to be confused with evaporated water or vapor, but actually salt water. This, of course, is very hard on unprotected iron or steel and was the deciding factor in using porcelain enamel.

Eight separate plates, that is, four large name plates and four small number plates, constitute a standard crossing

assembly, provision being made to turn them at any angle to accommodate streets intersecting on the skew. A ¾ inch rod screwed into the pole cap holds the assembly rigid. All name and number plates are the same size, the spacing and strokes of the letters being varied to give the best results. After some experience the manufacturer's layout man became very adept at choosing the right spacing and stroke.

Two new and rather large subdivisions which were constructed at this time, and which of course were unsigned, were used for the "trial balloon." The public reaction and comments were so favorable that a decision was made to go ahead with some 6000 intersections. The large name plates cost about $2.00 each and the number plates about $0.65, making the cost of the head $10.60; the pipe, fittings and labor costing another $20.00.

The new sign can be easily read from a distance of 300 feet and, from public reaction, we are reasonably satisfied with the installation. All portions of the sign are easily replaceable.

Open Discussion

What Characterizes An Engineer?

ENGINEERS have been writing definitions of "engineer" and "engineering" for more than a century. As the field broadened, the definitions became more involved. When the time came to define engineering in license laws for engineers there was a new upsurge of definitions, but no one of them was entirely satisfactory. Most were too all-conclusive; they could be interpreted as covering many activities that are not engineering.

Now, as an adjunct to its work in evaluating educational curricula, the Committee on Engineering Schools of the Engineers' Council for Professional Development has written a new definition of an engineer. That committee came to the conclusion that before it could state with any definiteness what courses were essential to the training of engineers it should know what characteristics are peculiar to engineers. So, after considerable study, it has put forward the following definition:

"An engineer is characterized by his ability to apply scientific principles to design or develop structures, machines, apparatus or manufacturing processes, or works using them singly or in combination; or to construct or operate the same with full cognizance of their design, and of the limitations of behavior under specific operating conditions; all as respects a specific function, economics of operation and safety to life or property."

In presenting this definition for discussion the committee points out that most of the current confusion in the colleges, with respect to what is engineering arises from failure to recognize the difference between the sciences and engineering. As an example of the difference it cites the fact that curricula in mining engineering and geology both contain courses in mathematics, physics, chemistry and geology. But the mining engineering course also contains courses in mechanics, hydraulics, hydraulic machinery, heat engines and electrical equipment. The distinguishing difference, the committee states, lies in the fact that the mining engineer is going to design, construct and operate, whereas, the geologist is not being trained to carry out any of those procedures.

The committee's definition deserves wide discussion and study, outside the teaching field as well as in it. Within the field of engineering education it could well serve to center attention on subjects that are essential to the training of a man to meet the requirements set up in the definition. That in turn might result in dropping many special engineering courses, which have multiplied beyond all reason in the past few decades.

Outside the schools, a carefully thought-out definition of this kind could lead to revision of the definitions in most of our license laws. This also would be a welcome as well as a much needed change. When the definition in the model license law was written, more thought was given to making sure that it covered all kinds of activities that engineers like to consider engineering than to what were the peculiar characteristics that set engineers off from their fellows. Now that the idea back of the license laws has been accepted nationally, the engineering profession should agree on a definition of engineering that will stand up under the most critical court scrutiny.

—Editorial, *Engineering News-Record,* March 2, 1950

44 States Adopt Motor Vehicle Financial Responsibility Law

Forty-four states now have motor vehicle safety responsibility laws in effect, according to the Council of State Governments.

Financial responsibility laws are designed to insure that owners and operators of automobiles pay for any damage that they may have caused. They also give the states more effective means of removing habitual accident causers from the streets and highways.

Under the laws, all motorists who are involved in accident resulting in death or injury to any one person or property damage exceeding $100 are required to furnish proof of their ability to pay damage claims up to $11,000. Proof must be given within 60 days after a report of the accident has been received by the state. Failure to furnish such proof to the state results in automatic suspension of the operators' driving license and registration tags.

Proof of financial responsibility may be either in the form of an insurance policy or a deposit with the State of from $101 to $11,000 depending upon the severity of the accident. In case claims arise from an accident, they are paid by the insurance company if the driver is insured or by the State from the deposit of the uninsured.

Louisiana, Mississippi, South Carolina, and Texas have no financial responsibility law affecting privately-owned automobiles. Texas requires all commercial vehicles to be insured, however. The only state having a law making it compulsory for car owners to carry liability insurance is Massachusetts.

—*Highway Research Abstracts, May 1950*

TRAFFIC NEWS

Yale Bureau Enrolls Record Class In Traffic Engineering

A class of 36 engineers, which is one of the largest to be enrolled at the Yale Bureau of Highway Traffic, will register for the course in Traffic Engineering. These include ten who have been granted graduate Fellowships in Traffic Engineering by the Yale Committee on Transportation. These Fellowships provide a stipend of $1400 each and enable recipients to engage in a full academic year of graduate study in Traffic Engineering at the Yale Bureau. Five men were awarded scholarships providing for the payment of tuition fees.

In announcing the awards, Theodore M. Matson, Director of the Bureau, pointed out, "Highway transportation reached unprecedented levels during the year. More motor vehicles are registered than ever before, the total vehicle miles of travel is at an all-time high. The magnitude of traffic congestion and the exposure to accidents continue to be major problems throughout the nation. The demands for highly trained and skilled men to deal with traffic problems from the scientific point of view are greater than ever before."

Nine of the Fellowships were made possible through a grant to the Bureau of Highway Traffic by the Automotive Safety Foundation. These Fellowships went to: Robert E. Barkley, Warren, Ohio; Gerard L. Drake, New York, N. Y.; Stewart C. Fischer, Houston, Texas; Lawrence E. George, Salem, Oregon; James H. Hardy, Alhambra, California; John R. Leek, Decatur, Illinois; William R. McGrath, New Haven, Connecticut; Robert L. Meyer, Lincoln, Nebraska; William T. Young, Columbia, South Carolina. The Gordon-Case Memorial Fellowship, based on a grant from the American Transit Association, was awarded to Carlton C. Robinson, Jr., Portland, Oregon.

Tuition Scholarships were awarded to Melvin Bierman, St. Louis, Missouri; John F. Green, Danbury, Connecticut; Robert H. Harleston, Jr., Columbia, South Carolina; Robert C. O'Connell, Cheyenne, Wyoming; and Charles O. Pratt, Stratford, Connecticut.

The International Road Federation awarded a Fellowship to John A. Hillier of the Road Research Laboratory, Middlesex, England, and the Concrete Association of India will sponsor C. L. N. Iyengar, Senior Assistant Engineer of that association, from Bombay, India.

Chamber Lists Solutions To Urban Truck Problems

Skyrocketing costs of urban truck operations are causing unnecessary extra expense to manufacturer, trucker, merchant and customer alike, according to an analysis made public by the Transportation and Communication Department of the Chamber of Commerce of the United States.

The study, entitled "Solutions to the Problem of Merchandise Pickup and Delivery in Business Districts," describes practical methods applied successfully by merchants, shippers, truckers and city officials in reducing local goods distribution costs.

The booklet points out that an extra delay cost of approximately $2 an hour for every hour of normal truck operating time results from causes such as lack of proper shipping and receiving facilities in downtown buildings, inadequate curb or alley loading space for trucks, and lack of coordination and cooperation between truckers and merchants.

In question-and-answer style, the solutions are grouped according to what can be done to remedy the situation by businessmen, motor carriers, and city officials.

Subjects discussed range from simple suggestions like keeping someone on hand during the noon hour to receive goods, to more broad-scale plans such as provision of union truck terminals and municipal zoning requirements for off-street loading facilities.

This 24-page report is one of a series prepared especially to assist businessmen in understanding and combating the increasing urban traffic problems. Copies are available at 10 cents each from the National Chamber's Transportation and Communication Department.

Traffic Engineering Handbook Off The Press

A revised and expanded edition of the "Traffic Engineering Handbook," the only comprehensive source book of techniques, principles and standards relating to street and highway traffic control and design, is now available.

This official handbook of the Institute of Traffic Engineers provides the latest facts, figures and formulae needed by traffic and highway engineers, transportation and planning officials, educators, students, researchers, economists and police. It is designed to serve as a practical day-by-day guide to the practicing traffic engineers and others who are called upon to solve traffic problems.

The handbook has been prepared under the direction of the traffic engineers handbook editorial board. Contributing authors include 16 of the nation's leading traffic and transportation engineers, while 35 specialists and authorities in the traffic field reviewed the text. Featuring 205 tables, 215 illustrations, 489 definitions of traffic terms, and 520 pages, the handbook covers such varied subjects as traffic accidents, traffic studies, roadway capacity and design, traffic signals, speed regulations and zoning, traffic signs, and street and highway lighting.

In addition, other chapters deal with vehicle and highway facts, vehicle motion, the driver and pedestrian, traffic markings and markers, parking and loading, one-way streets and arterial routes, traffic islands and pedestrian barriers, and pedestrian islands and bus loading zones.

The handbook is priced at $6 per copy; 26 copies and over $5 per copy. Copies may be secured by writing to the Accident Prevention Department, Association of Casualty and Surety Companies, 60 John Street, New York 7, N. Y.

Secretary's Column

Once again we return to our favorite subject—the value of personal contact between the Executive Secretary and the membership. Earlier in the Institute year we deplored the lack of funds to visit each Local Section during the year, but intimated that opportunities would afford for limited contact. Much to our surprise and pleasure, events shaped up during the year to make it possible to visit or to contact the individual membership of each of the seven local sections.

The New England Section being "on the spot" gave us ample opportunity for direct and continuing association. In New York, we always seemed to be on hand a few days before or after a local section meeting, but we met several times with the Annual Meeting Committees, composed of members of the New York Metropolitan Section, and did find the opportunity to attend their annual meeting in June. The annual meeting of the Highway Research Board last December afforded the first opportunity to visit a meeting of the Washington, D. C., Section. In June we participated, upon formal invitation, in the annual meeting of this Section.

With financial assistance from the Highway Research Board, we visited an impromptu meeting of the Midwest Section last February. The Annual Outing of the "F & F Club" (note Section News, this issue) and a regular quarterly meeting of the Board of Direction provided another opportunity to visit with midwest area members. The return trip from Wisconsin included a brief stop-over in Detroit and a short informal visit with some members of the Michigan Section. The Southern Safety Conference and the Spring meeting of the Board gave us an opportunity to meet with the widely scattered membership in the 14 southern states, including representatives of the Florida Section. All of these meetings still left a wide gap in our contacts with a large percentage of the membership in the eleven western states.

A rapid-fire exchange of letters, telegrams and long-distance calls late in July finally culminated in arrangements for your Executive Secretary to attend the Third Annual Meeting of the Western Section, ITE, in Los Angeles, August 3-4. President Smith, your Executive Secretary and representatives of the Western Section were unanimous in the opinion that national headquarters should be represented at a meeting of this nature. We quickly arranged a short round-trip-by-air schedule to attend this meeting and participated in the excellent two-day business and technical sessions. A major share of the expense was borne by the Western Section.

The Annual Meeting of the Western Section has all the earmarks of a pocket-edition of the national convention. As a matter of fact, we can remember national meetings only a few years ago whose attendance would not exceed the Western Section affair. Approximately 125 members and guests were on hand at the Hollywood Roosevelt Hotel and, typical of the traffic engineering profession, delegates quickly settled down to serious business and discussions on problems of the day. We must confess some surprise at the attendance of 60% of the total membership (100) of the widely scattered eleven western states. It was readily apparent that this annual affair was the only opportunity for a majority of the members to get together on a common meeting ground, as the national conventions are inaccessible due to the tremendous travel distance involved.

A word of warning to other local sections. You have some serious competion, *in all departments,* from the Western Section. They will be tough to catch, not only in membership, but in aggressiveness and rate of progress. We believe that all local sections can meet this challenge in proportion to their respective memberships. How about a good, old-fashioned, friendly spirit of competition and rivalry? This kind of "tonic" would do us all some good.

All of these local section contacts were mutually beneficial to your Executive Secretary and to the membership involved. It afforded an opportunity for us to acquaint the membership first-hand with current activities of national headquarters. It also provided an excellent chance for individual members to discuss personal problems and to relay constructive suggestions that will be helpful in improving the efficiency of personnel services of national headquarters and the style, format and content of "Traffic Engineering" magazine. These visitations also serve to cement relationships with non-member traffic and highway engineers and non-professional associates with whom traffic engineers are in daily contact.

We sincerely hope that future budgets will allow one of the national officers, or your Executive Secretary, to attend at least one meeting of every local section each year. Only through this means can we continue to grow in stature and prestige and determine the most desirable course on which to steer the Institute of Traffic Engineers in the best interests of its membership.

Robert S. Holmes
Executive Secretary

LOOKING AHEAD

SEPTEMBER 11-14, 1950—PORTLAND, OREGON
American Association of Motor Vehicle Administrators. Multnomah Hotel.

SEPTEMBER 18-21, 1950—NEW YORK, N. Y.
55th Annual Convention. International Municipal Signal Association, Inc. Hotel Commodore.

SEPTEMBER 24-27, 1950—NEW YORK, N. Y.
Annual Meeting. Institute of Traffic Engineers. Hotel Commodore.

SEPTEMBER 25-27, 1950 — LOS ANGELES, CALIFORNIA
American Transit Association. Biltmore Hotel.

OCTOBER 7-12, 1950—COLORADO SPRINGS, COLORADO
57th Annual Conference, International Association of Chiefs of Police. Antlers Hotel.

OCTOBER 9, 10 & 11, 1950—CHICAGO, ILLINOIS
Annual Meeting. National Council of State Boards of Engineering Examiners. Congress Hotel.

OCTOBER 15-18, 1950—NEW YORK, N. Y.
American Public Works Association. Hotel New Yorker.

OCTOBER 16-20, 1950—CHICAGO, ILLINOIS
38th Annual Safety Congress & Exposition, National Safety Council, Stevens Hotel.

NOVEMBER 26-30, 1950—HOUSTON, TEXAS
International City Managers' Association. Shamrock Hotel.

DECEMBER 4-7, 1950—MIAMI, FLORIDA
36th Annual Meeting. American Association of State Highway Officials.

JANUARY 8-12, 1951—WASHINGTON, D. C.
30th Annual Meeting. Highway Research Board. Academy of Science Building, 2101 Constitution Avenue.

SECTION NEWS

Michigan Section

The June meeting of the Michigan Section of the Institute of Traffic Engineers was held at the White Birch Country Club, northwest of Bay City, on June 23, 1950. A total of 25 members and guests were present.

Several of the members arrived early and took advantage of the golf course facilities. After dinner, a short business meeting was held at which time the President made appointments to the Membership and Program Committees for the coming year. It was understood that unless a "baseball" meeting was scheduled some time during the summer, the next regular meeting would be held the latter part of September.

A. C. Sherman, *Secretary*

Midwest Section
"F & F" Annual Outing

The "F & F" Club, predecessor to the Midwest Section, ITE, held its annual outing the weekend of June 22-26, 1950, at Balsam Lake, Wisconsin. The "Guests of Honor" this year, by special invitation, were members of the national Board of Direction of the Institute. On the afternoon of June 22nd, the "Twin Cities" branch began meeting incoming planes from all points and by early evening a majority of the "guests" were on hand for the motor trip to Balsam Lake. Messrs. Darrell and Sprungman served as capable guides into the wilds of Wisconsin, and a *quorum* was established at Balsam by 10:00 P.M.

Members and guests included Nat Cherniack, "Doc" Corbett, Jim Darrell, Bob Holmes, Bill McConochie and two sons, Hank Osborne, Harry Porter, Charlie Prisk, Matt Sielski and son, Ralph Sprungman, Wilbur Smith and Wayne Volk.

On June 23rd the Board plunged into a two-day agenda (note Secretary's column, August issue) while the "F & F'ers" hit the lake at dawn and began "throwing the bait box" at the unsuspecting bass. Surprisingly enough, by evening dinner-time most everyone had caught their respective quotas and a good old-fashioned fish dinner, fried in deep fat, was enjoyed by all. Later in the evening there were mutterings of *"initiations"* but Skinny DeYoung wasn't on hand to officiate so the project was abandoned in favor of a few mild games of chance. A "first-lesson" in the ancient pasteboard past-time of "Michigan Buck-up" was given by "F & F'ers" McConochie and Sielski, who subsequently succeeded in retiring from the game with a scant loin-cloth for clothing.

Saturday, June 24th, again found the "old-timers" Howard Ilgner and "Doc" Corbett of Milwaukee, showing the rest of the boys how to bring them in with the right choice of "plugs" (live minnows were completely ignored by the experts). The Board wound up its deliberations in time for President Smith to demonstrate what the well-dressed swimmer will wear. He spent some time obliging the "F & F'ers" with an exhibition of the swank shorts (loud enough to scare the fish away) donated for the occasion by the latter group. After a brief fishing lesson for certain Board members the entire group retired to temporary "Headquarters's Hut" for refreshments and some well-mannered yodeling.

Sunday morning the "experts" spent several hours reeling in a lot of grass and snags in the "choice spots" of the lake while the "Junior" contingent were pulling them in by the handful off the pier back at camp. However, "Doc" Corbett did get the prize strike, and only real catch of the outing, when he hooked a 21-inch, four-pounder with a well-placed cast. "Doc" says it's the biggest pulled in at Dixie Lodge by the "F & F" Club in 19 years. Hmmm! Any arguments, fellows?

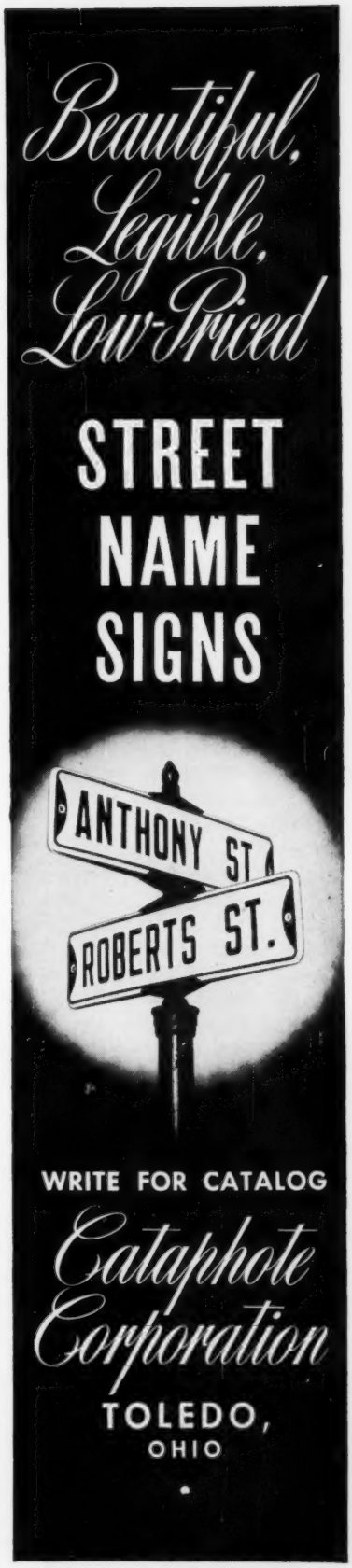
Robert S. Holmes
Ex-officio Secretary

New York Section

The New York Section held its Annual Meeting on June 29, 1950. At that time the report of the Nominating Committee was submitted recommending that the present slate of officers be continued for another year. By unanimous vote of those attending the meeting the following officers were reelected.

Edward G. Wetzel, president
Herbert A. Keegan, vice-president
Lawrence Lawton, secretary

The balance of the business meeting was devoted to discussion of details concerning the forthcoming ITE Annual Meeting and the important part that the New York Section will play in the preparation and conduct of this affair.



State-City Relationships

A Review by Carl E. Fritts (Mem., ITE)

STATE-CITY RELATIONSHIPS IN HIGHWAY AFFAIRS—*Edited by Norman Hebden and Wilbur S. Smith. Yale University Press, New Haven, Connecticut. 1950. 230 pp. $4.00.*

In this era, programs which must be carried out to achieve maximum benefits of highway transportation at the lowest overall cost must include effective coordination of inter-governmental relationships. Each *unit* of government must assume proper responsibilities for various classes of highway service, yet all must be tied together with understanding of the relationship that must exist between federal, state and local highway agencies. Administrative relationships between state and city have been expertly explored and discussed in this publication.

This study, which has been conducted for more than a year at Yale's Bureau of Highway Traffic under a grant from the Alfred P. Sloan Foundation, provides an authoritative and exhaustive discussion of the state-city relationship and provides invaluable constructive recommendations for solving many problems. The major objective is to stimulate the thinking of all operating officials concerned.

Existing policies and processes employed in the States of California, Connecticut, Illinois, Minnesota, Missouri, New Jersey, New York, Oregon, Rhode Island, South Carolina, Texas, and Virginia are examined and evaluated. The impact of these policies and procedures on twenty-two representative cities in these states is further explored and reported on.

This report presents a comprehensive analysis of the many segments of a well-ordered framework of state-city relations from the point of view of planning, construction, maintenance, and traffic operation on highway facilities of joint state-city concern. Its major findings and conclusions, drawn after more than a year's intensive study of the problem, are as follows:

1. It is clear that the states must assume a large share of responsibility for the improvement of major city streets which serve primarily to distribute highway traffic within an urban area.

2. Highway needs for each state, both rural and urban, must be ascertained.

3. The states must define the overall responsibility they will accept for city streets.

4. A review of the laws, and revision where necessary, is needed in each state to establish the responsibilities the state proposes to undertake in cities and to provide the necessary broad authority permitting the state to accept those responsibilities.

5. Comprehensive state policies, uniformly executed, are essential to good state-local relations.

6. The states and cities should collaborate closely and jointly establish an urban highway system to serve all important inter- and intra-city traffic needs.

7. The state should collaborate closely with the cities in determining needed improvements, their location, order of priority, and details of plans.

8. Both states and cities must equip themselves administratively and technically to meet the joint problems.

9. The states and cities should each develop short and long-range capital improvement programs for urban highway work, including a financial plan for its accomplishment.

10. Clearly defined and uniformly applied cooperative working procedures for the execution of joint state-city highway projects are essential; and as much local participation and administration as possible should be provided in all work under adequate state administrative controls.

11. Broad state control over traffic-operating matters should be inaugurated in the interest of essential uniformity.

12. With respect to the integration of highway planning in metropolitan areas, it is suggested that careful consideration be given the several possibilities of handling the problem: either by (1) the creation of informal regional committees, (2) the utilization of extraterritorial planning powers, or (3) the use of a metropolitan authority as the responsible agency for this task of planning and coordination.

13. There should be more intensive development and use of procedural guides and policy directives by the states, with direct dissemination to cities.

14. Discussion of controversial and troublesome problems at state-wide meetings called by the highway department, where problems can be divorced from any specific project and examined objectively, would go far toward bringing about better understanding and improved relations.

The Role of Highways

HIGHWAYS IN OUR NATIONAL LIFE—*Edited by Jean Labatut and Wheaton J. Lane, Princeton University Press, Princeton, N. J., 1950. 506 pp. $7.50.*

Nearly every aspect of the modern highway is considered in this comprehensive volume. The distinguished authorities who contribute to it give a sweeping analysis of the "highway revolution," and bring facts and interpretation from many fields of knowledge to illuminate the highway's impact on modern life.

Engineers, architects, regional and city planners, economists, sociologists, safety and traffic specialists, even landscapists and lighting experts—all of these and others in addition make their contributions. Historians set the work in historical perspective in chapters discussing the highway in the ancient Near East, China, the Roman Empire, modern Britain, and early America. Following this, economists and sociologists study problems of land use, financing, and the inter-relation of the highway with its environment. The development of cities and urban-rural relationships are examined, together with the problem of a permanent right of way in a changing environment.

Another group of chapters deals with the design of highways and their intersections, with special attention to expressways and controlled-access highways. Highway construction, landscapeing, and maintenance are considered, and the influence of climate receives special attention.

Forty-eight contributors from widely diversified fields have combined to make this an unusual and thoughtful analysis of the role of highways in current society.

Members of the Institute of Traffic Engineers contributing to this publication include: G. Donald Kennedy, Franklin M. Kreml, Charles S. LeCraw Jr., D. Grant Mickle and Leslie Williams.

MEMBERSHIP INFORMATION
may be obtained by writing to:
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Institute of Traffic Engineers
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New Appointments

FRED W. FISCH was promoted to the position of Deputy Superintendent of the New York State Department of Public Works on July 16, 1950. Fred was born in Washington, D. C. He is a graduate of Union College and a licensed professional engineer. During World War I he served with the U. S. Quartermaster Corps in South Schenectady and later in sanitation work at Souther Field, Americus, Georgia. During World War II he served as War Transport Administrator for Schenectady County.

He has had wide experience in engineering and public works, including sanitary work, city planning, public housing and traffic. In 1946 he joined the staff of the State Department of Public Works as Principal Civil Engineer in its newly formed Bureau of Arterial Route Planning and was promoted to Director of that Bureau in September, 1947. In 1949 this Bureau was absorbed in the new Bureau of Highway Planning, of which he was the first Director, and which position he now holds.

Mr. Fisch has had a wide range of associations with engineering, planning and civic organizations.

A resident of Schenectady, he served with the Municipal Housing Authority of that city for 16 years from 1934 to 1950.

Organizations of which he is a member include the American Society of Planning Officials, National Society of Professional Engineers, Institute of Traffic Engineers, Highway Research Board, and Albany Society of Engineers.

LLOYD B. REID, member ITE, was appointed Commissioner, Department of Traffic, City of New York, on June 7, 1950, following enactment of an amendment to the City Charter creating a new Department of Traffic under a single head and abolishing the Traffic Commission and the Department of Traffic Engineering. All responsibilities and duties formerly vested in the Traffic Commission were transferred to Commissioner Reid.

Fabian Bachrach

"Dutch," as he is referred to by his many ITE friends and professional acquaintances, is one of the early pioneers in the field of traffic engineering. He received his Bachelor of Science in Civil Engineering at the University of Michigan. He entered the service of the Michigan State Highway Department in 1933 and served successively as Maintenance Engineer, Director of Finance, Deputy Commissioner and State Highway Commissioner for the following ten years. In 1943 he became Traffic Engineer for the City of Detroit. He left this position in 1948 to enter the private consultant field.

On February 1, 1949, "Dutch" was appointed by Mayor O'Dwyer as Traffic Consultant in the creation and operation of the New York City Traffic Commission and Department of Traffic Engineering. He is a registered professional engineer in Michigan and New York State. In addition to membership in the *Institute*, he is a member of the American Society of Civil Engineers, the Michigan Engineering Society and the Engineering Society of Detroit.

ALBERT E. LOW was recently appointed Assistant Traffic Advisor, Board of Safety, City of Buffalo, to assist Henry Osborne in an expanded traffic engineering program for the city.

Low received his Bachelor of Science in Engineering degree from the University of Michigan in 1944 and subsequently spent two years as a commissioned officer and engineer in the U. S. Public Health Service. After being discharged, he returned to Michigan for a year of graduate work in traffic and transportation, which was completed in August 1947, and was awarded a Master of Science in Engineering degree.

His activities at Michigan included membership on the Varsity track team, Associate Sports Editor of the "Michigan Daily," President of the Scalp and Blade (campus organization), a four-year scholarship holder and a member of Theta Delta Chi. During his year of graduate work he was manager of the track team and at present is vice-president of the University of Michigan Manager's Club.

After receiving his Master's degree, Low spent 15 months as a commercial engineer with the Union Switch and Signal Company of Swissvale, Pennsylvania. In January of 1949 he accepted a position as traffic engineer with the Chicago Motor Club under Matt Sielski. Later in the year he joined Edwards & Kelcey, consulting engineers, on a temporary assignment before accepting his present position in Buffalo. He is currently making application for membership in the Institute of Traffic Engineers.

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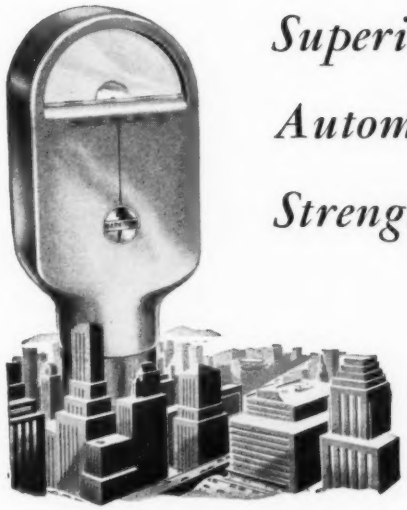

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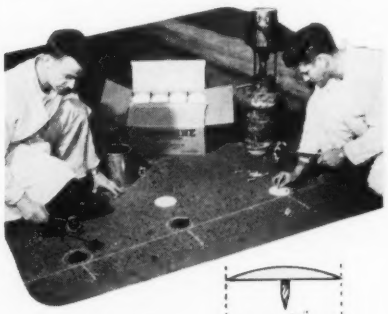

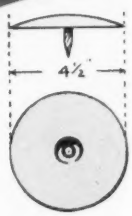

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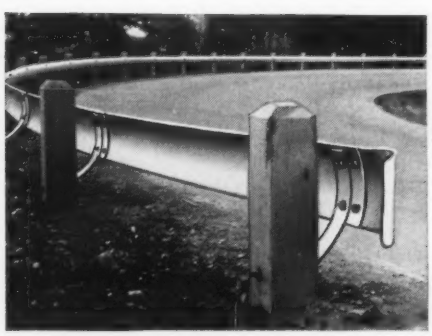

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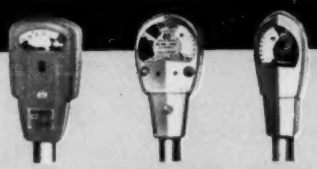

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Personal Enterprise On Public Work Pays Off

Chicago taxpayers are wearing the satisfied smile that goes with a good bargain as the first of the city's new, acid-resistant street name signs went up in the Loop. Whether they all realize it or not, each of the 67,000 two-faced porcelain enameled signs to be erected in the largest single street name sign erection project of all time will cost only $1.67 because of the basic new design developed by one city employee after the city started its sign shopping two years ago. At that time, the lowest acceptable bid was $7.65.

That's only part of the story behind the new street name signs which Ralph Michel (Mem., ITE), Associate Traffic Engineer of the Bureau of Street Traffic, developed in an effort to find a single simple solution to the manifold problems of low-cost production, economical installation and maintenance, and lasting visibility and life.

While Michel has shared responsibility for the development of the city's traffic control signal system and many other traffic matters during his 28 years in the department, he started to work nights on the street name sign problem when he couldn't find a satisfactory answer.

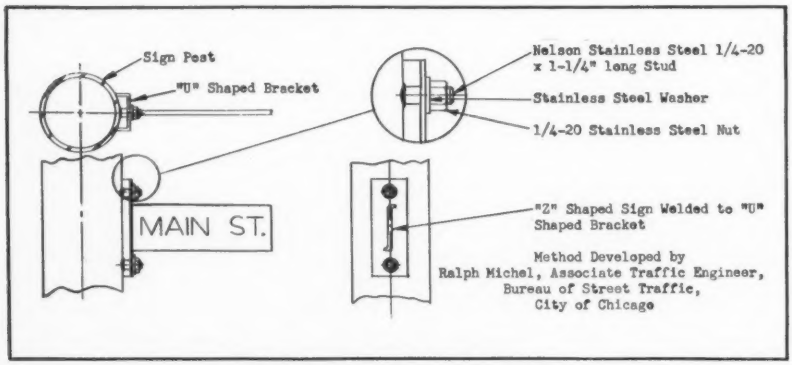
Trying one design after another for more than six months, he finally hit on the universal solution, on which he has applied for a patent. Meanwhile, he has licensed the City of Chicago to use the design without cost. The Bettinger Enamel Corporation, Waltham, Mass., received the contract for Chicago's first 25,000 signs on a bid of $1.67, which was the lowest of 11, with the others ranging from $2.25 to $4.65. Michel estimates that this new design should enable a firm like Bettinger to supply smaller quantities to other cities at approximately $3.50 a sign.

Photo courtesy of Nelson Stud Welding Division Morton Gregory Corporation

Erection of Chicago's new street name signs was started in the Loop on July 10 as L. M. Johnson, Commissioner of Streets and Electricity, placed the first of 25,000 signs covered by the poles with the Nelson stud welding gun. Mayor Martin H. Kennelly (right) and Alderman George D. Kells (left) look on.

The secret of Michel's design is in the use of relatively heavy (No. 14 gauge) enameling iron, which is oppositely flanged at the top and bottom to give it structural strength. This is Heliwelded to an ingeniously designed mounting channel of No. 12 gauge enameling iron, with holes on the face for bolting to fasteners on steel poles, pedestals or columns and slots on the sides for banding to bronze, concrete or cast iron poles. Since the sign is all one piece, there is nothing to assemble, and it is simple, functional and durable.

In the Loop, where installation of the first thousand signs started recently, all are being installed with stainless steel fasteners which are end-welded to the steel poles in an instant with the Nelson stud welding gun. This fast economical method provides permanent anchorage for the signs, which can support a weight of 440 pounds at the outer end.


Sign Post
"U" Shaped Bracket
Nelson Stainless Steel 1/4-20 x 1-1/4" long Stud
Stainless Steel Washer
1/4-20 Stainless Steel Nut
MAIN ST.
"Z" Shaped Sign Welded to "U" Shaped Bracket
Method Developed by
Ralph Michel, Associate Traffic Engineer,
Bureau of Street Traffic,
City of Chicago

Nelweld Method of Securing Street Signs

"Z" shaped sign is welded to a "U" shaped bracket. 1/4-20 Nelson flux loaded stainless steel studs are welded to the post. The "U" shaped bracket having two 3/8" diameter holes is placed over the studs. Stainless steel nuts and washers are used to hold the sign in place.

New Traffic Engineering Handbook

Contributing authors are 16 of the Nation's leading traffic and transportation engineers.

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Preparation under direction of Traffic Engineering Handbook Editorial Board.

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520 pages; 215 illustrations; 205 tables and 489 definitions of traffic terms.

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ITE Cooperates With Safety Educators

The National Conference on Safety Education (by Colleges and Universities) is sponsoring a meeting in Cincinnati, Ohio, November 19-21, 1950. This conference is administered by the National Commission on Safety Education; National Education Association.

A representative of the Institute of Traffic Engineers, Taylor D. Lewis, met with representatives of engineering colleges and industry at the University of Maryland early in June to formulate a program for the fall meeting in Cincinnati.

The general plan of approach to Safety Education in engineering colleges is the inclusion of safety in course content, laboratory practice, and safer college community living, in addition to specialized courses in such safety engineering as are included in some phases of traffic engineering.

The conference in Cincinnati is aimed at the college administrator—dean level. Members of the Institute participating are Taylor Lewis, Wilbur S. Smith, A. A. Potter, Sidney J. Williams, H. A. Flanakin, Norman Damon, and R. O. Bennett.

The Connecticut Point System

The Commissioner of Motor Vehicles, State of Connecticut, is required, by law, to keep records of all motor vehicle violations reported to him. The great majority of Connecticut drivers go through a lifetime of driving without ever being reported, warned or arrested —without ever having an accident.

The Point System is designed to reach those few drivers who, for one reason or another, seem to have more than their share of accidents, court convictions, or police warnings.

Point System Scale

Fatal accident involvement, if held responsible	10 Points
Operating under the influence of liquor or drugs	10 Points
Evading responsibility	8 Points
Racing	8 Points
Operating under suspension	7 Points
Reckless driving	6 Points
Reckless driving (if fine is less than $50)	4 Points
Speeding	3 Points
Passing standing school bus	2 Points
Violation rules of the road	2 Points
All other convictions for moving violations	2 Points
Police or Inspector's warnings	1 Point
On proven complaint of moving violation	1 Point
Accident involving responsibility, no conviction	1 Point

3 Points Call For a WARNING LETTER

5 Points Call For a CONFERENCE

6 Points CALLS YOU FOR A HEARING

POINTS ARE ERASED AS THEY BECOME FIVE YEARS OLD.

To keep an inventory of your record fill in below

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Accidents .....

Police warnings .....

Any other motor vehicle violations .....

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Games Won	Games Lost	Pct.
0	0	1000

Back Row — Left to Right

ROBERT TYRRELL, JR., Catcher; GEORGE ANTONELLI, Pitcher; FRANK DAVIS, Fielder; DAN HARF, Fielder; DICK GARVER, Pitcher; BOB DUNCAN; Fielder; CARL KAESER, Fielder; and DICK MAZY, Third Base.

Front Row — Left to Right

IRVING HOSTETLER, Catcher; BOB CROME, Second Base; RAY ACOSTA, Short-Stop; "RED" MATHEWS; DICK GARVER, JR., Bat Boy; LEE DANIELS, Fielder; and DAN CHUNG, First Base and Assistant Playing Manager. Since this picture was taken NORMAN K. DUNWELL (Assoc. Mem., ITE) has been appointed as a Pitcher and Playing Manager. The team has all the enthusiasm and pep required for a good season and has entered the Municipal Softball Association. A lot of good clean fun is expected by all.

Forest H. Green, Consultant in Egypt

Forest H. Green, Associate Member, ITE, is spending the summer in Egypt as a highway consultant to the Egyptian government. Forest writes that although his work was to be in highway planning he has time to look around a little in Cairo and Alexandria at the traffic problems. He states there are 11,000 cars in Alexandria where before the war there were only 4,000. The city is experimenting with one-way streets and planning to establish their first two off-street parking lots.

Forest states that he is suggesting an organizational set up in the State Road and Bridge Department, Government of Egypt, and has included a Traffic Management Department reporting directly to the Chief Engineer. He expects to return to the States in time for the Institute's Annual Meeting.

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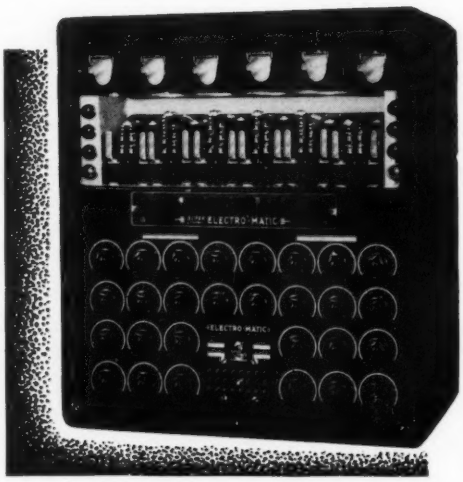

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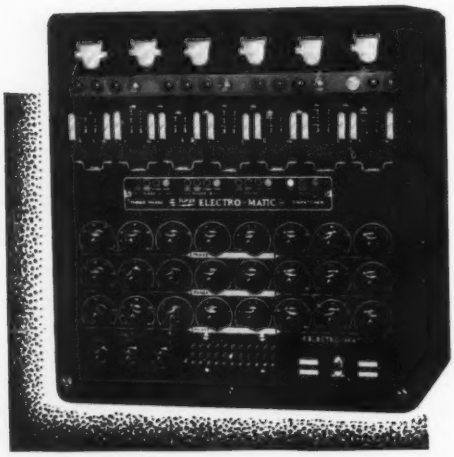

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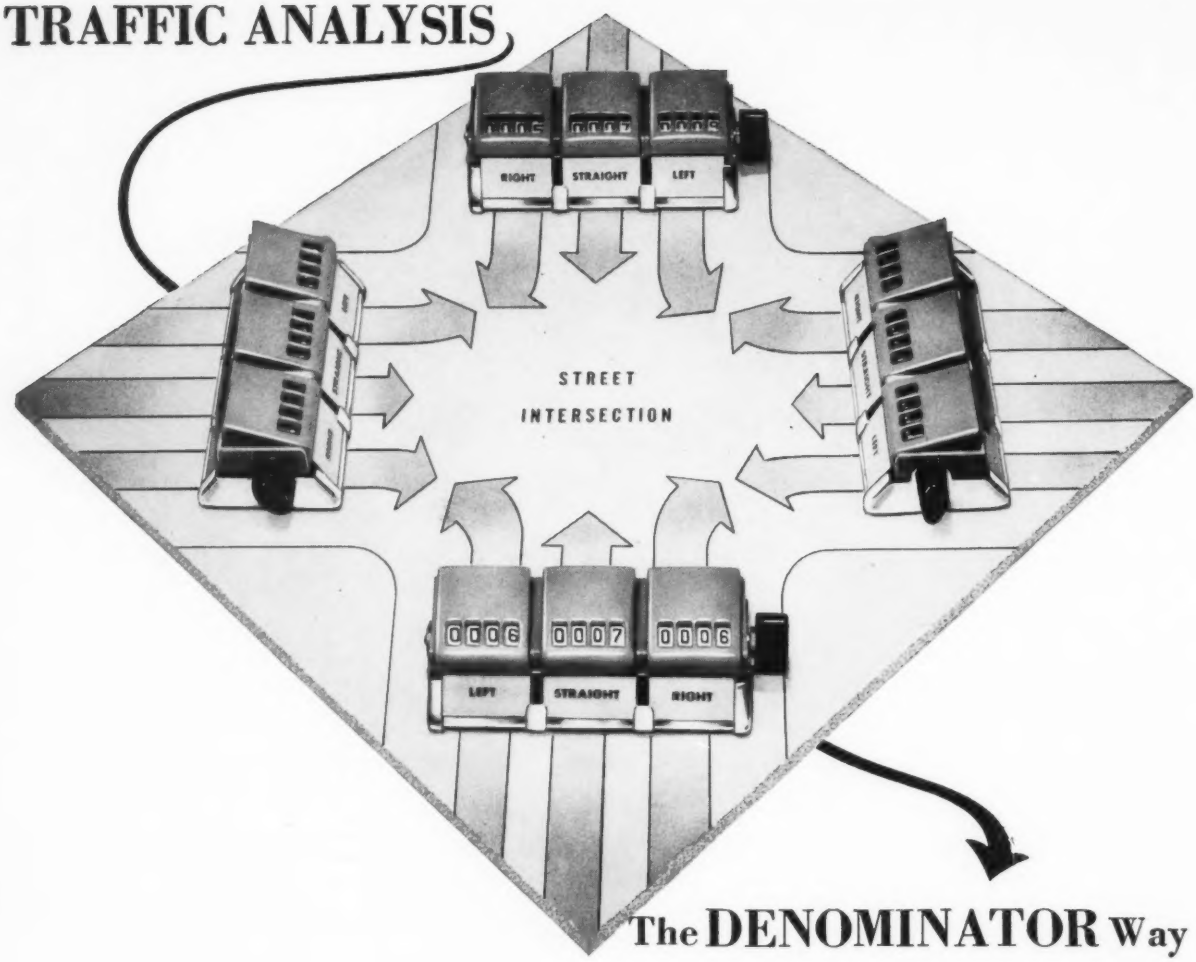

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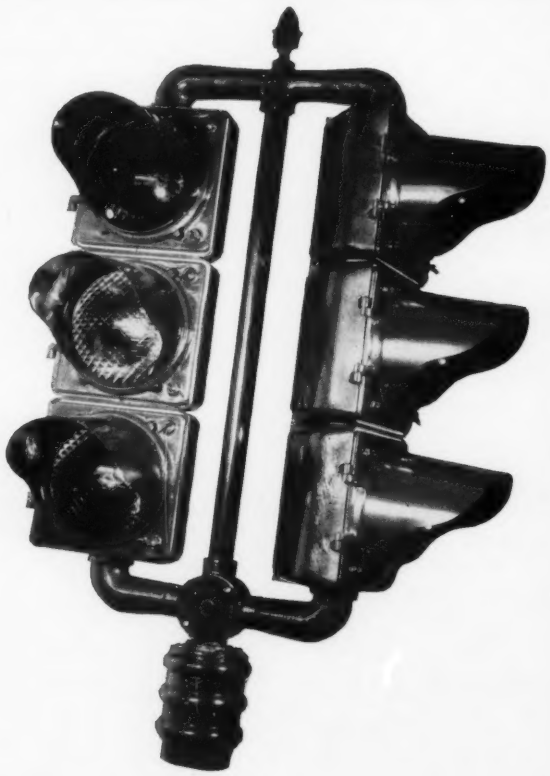

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